

WHAT IS CLAIMED IS:

1. A dental modeling device comprising:

an upper base member having an arch-shaped span with a plurality of substantially parallel channels passing therethrough, and a rear wall joining posterior portions of said span;

a lower base member having an arch-shaped span with a plurality of substantially parallel channels passing therethrough, and a rear wall joining posterior portions of said span;

an articulator coupled to and joining said upper and lower base members along said rear walls to form a dental model, said articulator providing hinging and pivotal motion of said base members about an axis;

an adjustable workstand and label panel assembly coupled to at least one of said upper and lower base members, said workstand providing adjustable positioning of said dental model on a work surface and said label panel containing textual information and being physically associated with said model; and

a protective case adapted to receive the dental model and display said label for storage and transport of said model.

2. The device as set forth in claim 1, wherein each of said upper and lower base members is coupled to a respective arch-shaped dowel pin tray, each dowel pin tray having a platform with a plurality of dowel pins extending therefrom which fit into

corresponding ones of said plurality of channels.

3. The device as set forth in claim 2, wherein each of said plurality of channels includes generally triangularly-shaped channels in an anterior portion of said base members and generally oval-shaped channels in said posterior portions of said base members, said plurality of dowel pins on each dowel pin tray being complementarily shaped to fit into said channels such that dowel pins in an anterior portion of said tray are generally triangularly-shaped prisms and dowel pins in posterior portions of said tray are generally oval-shaped prisms.

4. The device as set forth in claim 2, wherein said arch-shaped dowel pin tray includes a fringe that is wider than said corresponding base member to allow for easy trimming of excess dental stone when forming a dental cast upon said tray.

5. The device as set forth in claim 2, wherein said arch-shaped dowel pin tray includes at least two vertical extensions extending from said platform opposite said dowel pins to accommodate varying dental cast sizes.

6. The device as set forth in claim 3, wherein said workstand is hingedly connected to the rear wall of said lower base member,

said label panel extending outwardly from said hinge toward the anterior portion of said respective base member.

7. The device as set forth in claim 6, wherein an inner surface of at least one of said posterior portions includes a plurality of dome-shaped protrusions in a semicircular arrangement, adjacent protrusions forming grooves therebetween, said workstand having an edge that fits snugly against said inner surface and is adjustable to fit within one of said grooves to change an orientation of said model on the work surface.

8. The device as set forth in claim 6, wherein said label panel is detachable from said workstand, said protective case having a corresponding label holding seat for securing said detached label panel therein.

9. The device as set forth in claim 8, wherein said case further includes a finger groove adjacent said label holding seat to allow for easy removal of said label from said seat.

10. The device as set forth in claim 1, wherein at least one of said base members has an etched area on a side surface thereof for writing on said side surface.

11. The device as set forth in claim 2, wherein free ends of said dowel pins protrude from said base members when fully inserted therein, said free ends having a w-shaped end surface to facilitate insertion and removal of the dowel pins from said base members.

12. The device as set forth in claim 11, wherein at least one of said rear walls includes a removable tool punch-marked therein, said tool having a pointed tip to press cooperatively against said w-shaped surface to remove the dowel pins from said base member.

13. The device as set forth in claim 1, wherein said protective case includes a layer of compressible material on an inner surface thereof to cushion and snugly secure the model within the case.

14. The device as set forth in claim 1, wherein said lower base member includes at least two protrusions on an outer surface thereof, said protective case including corresponding apertures on an inner surface thereof such that, when said model is inserted into the case, the protrusions snap into said apertures to hold the model.

15. The device as set forth in claim 1, wherein said articulator includes first and second articulator arms, said first

articulator arm having a rounded head with a through-passing hole, said second articulator arm having a chamber support arm that defines a generally rectangular channel, an elongated spindle element passing freely through said hole for hinged movement therein and also movable within said channel to provide for cooperative movement of said first and second arms to simulate side-to-side and protrusive jaw movement using said model.

16. The device as set forth in claim 15, wherein said second articulator arm includes a retractor for acting, in an absence of manual manipulation of said model, to automatically return the model to an at-rest position in which the upper and lower base members are substantially parallel with one another.

17. The device as set forth in claim 16, wherein each of said first and second articulator arms include a corresponding occlusal stopper that works complementarily with the occlusal stopper of the other arm to prevent collision between dental casts formed upon said dowel pin trays upon action of said retractor.

18. The device as set forth in claim 15, wherein each of said upper and lower base members is provided with a first articulator arm and a second articulator arm, the first articulator arm of said upper base member having a snap-in fit with the second articulator

arm of said lower base member through insertion of the respective ball-shaped spindle into the corresponding channel, and the second articulator arm of said upper base member having a snap-in fit with the first articulator arm of said lower base member through insertion of the respective ball-shaped spindle into the corresponding channel, each coupled pair of articulator joints being connected to respective rear walls of said upper and lower base members proximal the posterior portion thereof.

19. The device as set forth in claim 2, wherein each of said dowel pin trays has a dental cast embedded therein such that, when stone forming the cast is set, the dowel pin tray is removed from the base member and cut into a plurality of dies, each die having at least two dowel pins embedded therein such that each die may be individually inserted and removed from said base member relative to other of said plurality of dies.

20. The device as set forth in claim 2, further comprising a protective plate connected along a line of perforations to said dowel pin tray for protecting said label panel when pouring a dental mold, said line of perforations allowing said protective plate to be easily removed after the mold is poured.

21. The device as set forth in claim 10, wherein said side

surface further includes protruding teeth patterns onto which information relating to tooth shades may be written.

22. The device as set forth in claim 10, wherein said side surface includes a pre-printed paper adhesive label applied thereon.